

Subject: Oceanography Related Careers

Grade Level: 9-12th grade

Average learning time: one week 90-minutes lessons

Overall Concept: Encourage/motivate students to pursue oceanic career

Objective: Students will be able to explore oceanic career jobs, duties and responsibilities, life on a ship and communication between teams. Students will watch real field oceanic research team videos and ship captain team's real time interview questions-answers videos and connect it with role play in the class.

Specific Concepts (Key Concepts):

Students understand and explain how real life research is done at sea with efficient collaboration among researchers, explorers and ship crew teams.

Students understand and comprehend life at sea.

Students understand decision making by ship captain and lead researcher.

Students explain what research team members, explorers, ship crew do, their qualifications, shift time, income and perks.

Focus of the lesson:

I introduced research crew team members to my students by showing a picture of Nelson-a chief researcher, Lindsey – a lead research team member, Rachael and Grant- ocean explorers, and sample collectors in a research team, Andrew – a NOAA undergraduate student intern.

I introduced ship crew team members to my students by showing a picture of Shawn - ship captain, Dave- assistant captain, Mark – technical lead, Philip – in charge of machinery and parts, Melissa – a chef etc.

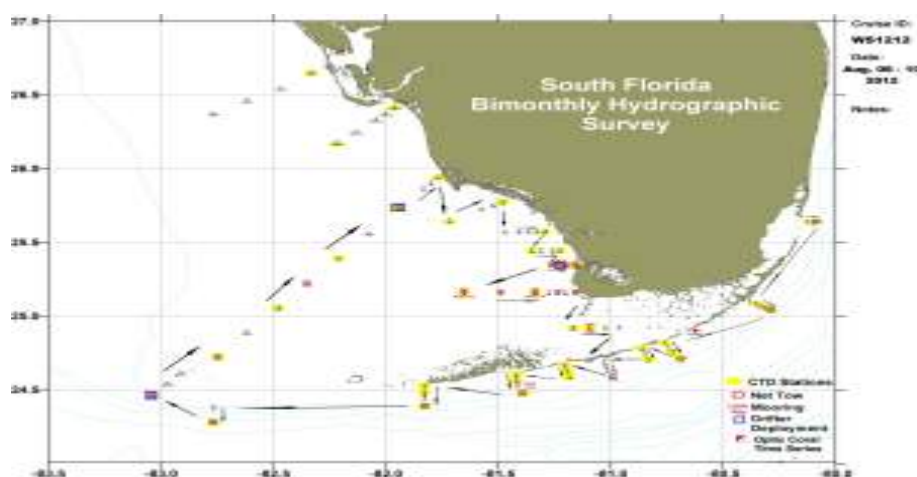
I asked questions about their work and responsibilities. All students were given a KWL (know, want to know, learned) chart where they can write what they know about oceanic work and responsibilities, what they want to know from the beginning of the lesson and what they learned at the end of the lesson.

Vocabulary used: interest, qualifications, jobs, responsibilities, shift, decision making, collaboration, team, efficiency, perks etc.

Background Information: Students read various NOAA blogs and ocean articles; Students also read **Ms. Rawal's blog** (<http://teacheratsea.wordpress.com/category/bhavna-rawal/>). It **looks like below:** Hello students! We know how to do water testing in our lab class using the testing kit. Today, I am going to explain to you the way ocean water is sampled and tested along the South Florida coastline.

Our 5 day cruise consists of over 80 stations along the Atlantic and Gulf coast of Florida. At each station we take water samples, and at about 20 of the stations we tow nets to catch fish, seaweed or plankton and sometimes scuba dive to recover the instruments mounted on the seafloor.

Our journey begins at station #2 at Dixie shoal, which is near Miami; you can see this on the South Florida bimonthly Hydrographic survey map below (see fig).



South Florida Bimonthly Hydrographic Survey map

Equipment and materials: projector, movie-maker, computer, paper, pens, KWL chart, compare- contrast chart

Procedure: Show video asking following questions to all ship crew members including research team and ship team and their replies:

- 1) What made you take up this career?
- 2) What are your jobs and responsibilities?
- 3) How long have you been doing this job?
- 4) What is your educational qualification for this particular job?
- 5) What are your job timings?
- 6) What safety precautions do you have for doing this job?
- 7) With whom do you collaborate in order to do your job?
- 8) How important is communication in this job?
- 9) Who makes major decisions about research or ship route or other topic? Why?

10) What are the benefits to being as an ocean explorer or NOAA researcher or in a ship team?

Grid/observation form to be filled out while watching video by students:

Name of students:

Grade:

Name of crew member	Job title	Educational qualification	Job responsibilities	interest	Shift time	Safety	benefits	Team work	Communication	Decision making

Discussion: After watching interview videos, teams of students discuss:

Research teams' job is to conduct research related to temperature, salinity, chlorophyll and CDOM in ocean (the oceans chemical, biological and physical characteristics). They also analyze collected data and graphs from oceanic research.

Walton Smith captains' job is to check weather, monitor wind, ocean currents and steer ship according to plan. Their technical team lead checks all technical parts and machine functioning. Their parts and machinery department check for all machinery functioning periodically. Chef cooks breakfast, lunch and dinner for the team. There will be a fire drill and safety drill every week in a ship. Everyone has to follow safety protocol during the drills.

Students compare and contrast jobs on land and oceanic job functions and benefits discussion within team using following table:

Types of jobs	Job on Land	Oceanic expedition job
compare		
contrast		

Role-play project: Students can divide two teams one is a research team and other is a ship team. Ship team will assume a role of a ship captain, assistant captain, tech person, material, equipment manager and chef. Research team will assume a role of chief researcher, lead researcher, ocean explorer, and data collector and student intern.

1) Teams will decide the type of the expedition they want to explore.

2) Each team member will assume their roles and decide their responsibilities. So, they can play their roles and show their responsibilities/duties during play.

3) Students will role play one or two scenarios such as deciding route in a rough sea or when to stop running ship while taking samples from sea on a certain station. This way they can demonstrate communication and decision making is important among teams while performing real-life research.

Students prepare their drama and present their roles and responsibilities, all scenarios to other classes, entire school and community.

Presentation: Students must describe the purpose and procedure of their play. Students must describe different types of careers at sea. Discuss what they observed and what they learned during this lesson.

Science Project Gallery Walk: During open house and science class, students set up projects in the main office hallway, they allow other students to learn from their findings as they walk through the hall. Students will do a brief show and tell for others.

Author: Bhavna Rawal, Victory Early College High School, 4141 Victory drive, Houston, Texas 77088